TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
UNIVERSITY FARM ST. PAUL 1, MINNESOTA

No. 297

Mortality Losses are Low in Managed Forests

A recent re-inventory of the Cutfoot Experimental Forest in northern Minnesota illustrates an important but little-realized benefit of forest management - that the salvage of prospective mortality by proper marking at the proper time may equal or exceed the net growth on the residual stand. Without management this extra return would be largely lost.

The Cutfoot Experimental Forest of 2,346 acres was cut over in 1940 and 1945, largely to salvage mature jack pine which made up about 40 percent of the growing stock. As a result, 94 percent of the expected saw-timber mortality was salvaged.

The percent of net growth, salvage, and mortality loss, by types, for the 1940-45 period are shown below:

Species	Net growth		Salvage		Mortality loss	
	Cubic feet	Board feet	Cubic feet	Board feet	Cubic feet	Board feet
	Percent of original stand					
Jack pine.......	1.65	2.10	9.24	11.23	1.18	.67
Red pine........	4.06	5.19	.82	.81	.16	.05
White pine......	7.52	5.80	.74	.77	.10	.04
Spruce-balsam...	9.17	12.06	.30	.40	1.53	2.17
Cedar-tamarack..	6.91	9.23	....	....	1.04	.98
Hardwoods.......	7.45	9.12	.33	.73	.54	.62
All species.....	3.33	4.15	4.42	4.86	.67	.32

The annual net growth on the residual stand was 550 M board feet, Scribner rule. The prospective annual mortality was 687 M board feet, of which 645 M board feet were salvaged as usable products. The net annual mortality loss consisted of 42 M board feet of unmerchantable material (see figure on back of sheet). The return from salvage of expected mortality, in this instance, was greater than that from growth. This added return was a dividend paid by forest management.

July 1948 Paul Zehngraff and S. R. Gevorkiantz, Silviculturists

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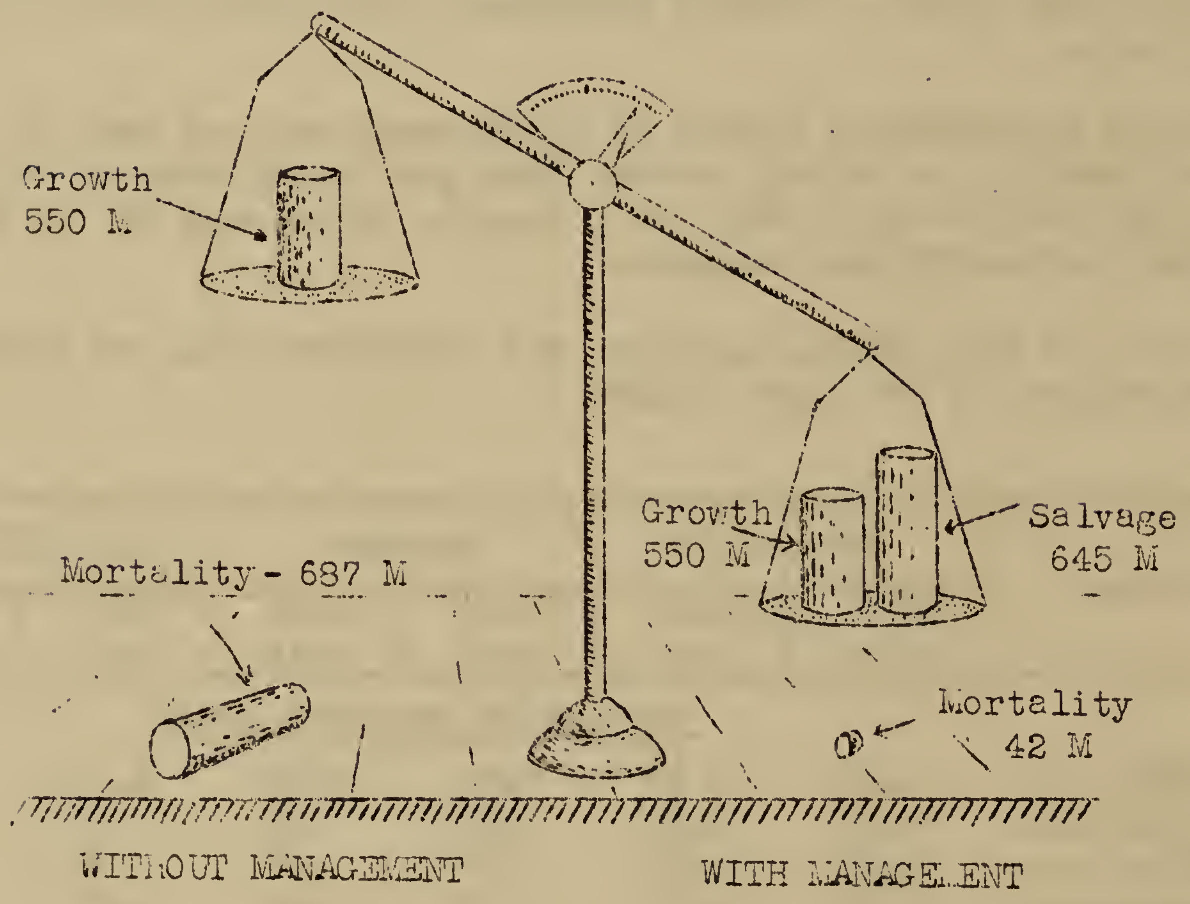
MORTALITY LOSS OR SALVAGE - WHICH?



This return would not have been possible had the forest been left unmanaged.